

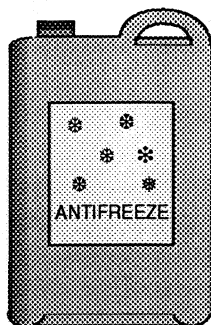
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ENVIRONMENTAL DATA FACTSHEET

Illinois Hazardous Waste Research and Information Center

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Safe Use and Disposal of Antifreeze

Antifreeze plays an essential role in maintaining proper car operation. This factsheet provides information on health effects and proper use and disposal of antifreeze. Recommended mixtures of ethylene glycol to water vary from 70:30 to 50:50 depending on the area of the country. Antifreeze keeps water-cooled engines running through a variety of temperature extremes. Ethylene glycol extends the freezing point of water from the normal 32°F to -50°F.

Antifreeze should be periodically flushed from the automobile radiator/cooling system and replaced. If done in a commercial garage, the antifreeze is usually collected and recycled. For the home mechanic, proper disposal techniques and prevention of spills and leaks can safeguard the health of your children and pets. Proper disposal is discussed on the reverse side of this factsheet.

Human Health Effects of Antifreeze

Ethylene glycol is poisonous when ingested. Since it is a clear, colorless liquid with a very sweet taste, pets and small children may drink it if they have access to the container or to a spill or leak. Just 3 ounces (100 ml) of 100 percent pure ethylene glycol can kill an average size adult. Some signs of ingestion in humans include twitching muscles, followed by depression, vomiting, drowsiness, convulsions, coma, and severe kidney, respiratory and cardiac failure. The Poison Resource Center recommends that *immediate* medical attention be sought at a hospital emergency room. Do not induce vomiting. Delaying treatment greatly increases the chances of death or permanent organ failure.

Poison Resource Centers

Southern and Central Illinois	1-800-252-2022
Cook County and 9 collar counties	1-800-942-5969
Northern Illinois	1-800-543-2022

Antifreeze and Pets

Many dogs and cats suffer and die every year due to poisoning from discarded or leaking antifreeze. The best preventative is to make sure that any spills or leaks are cleaned up immediately. This is best done by spreading an absorbent material such as floor dry, cat litter, or saw dust on the antifreeze puddle. Once absorbed, the material may be swept up and put in the trash for pick-up.

There are several things a pet owner can do if they observe their animal drinking antifreeze. Immediately seek veterinary assistance. The longer the antifreeze is in the animal's body, the more deadly it becomes as it is broken down into metabolites that are more toxic than the ethylene glycol itself. If a veterinarian is not readily available, an owner can induce vomiting in a dog immediately after ingestion of the compound, but veterinary care is still urgently needed. This helps to prevent absorption of the materials from the gastro-intestinal system. First, feed the dog something if it has not recently eaten. Then, make it swallow 3 percent hydrogen peroxide solution — depending upon the size of the dog, the amount needed will vary from one teaspoon to three tablespoons. Do not do this more than twice. Cats are more susceptible to ethylene glycol poisoning than dogs. Depending on the amount ingested, immediacy of veterinary care will increase the chance of the pet surviving.



Proper Disposal of Used Antifreeze from Home Auto Repair/Maintenance

Disposal methods for used antifreeze will vary depending upon where you live and the type of radiator in your car. With older cars, there is the possibility that lead from the solder used in manufacturing or repairing the radiator may contaminate the antifreeze. The best method for disposing of the used fluid is to transfer the antifreeze to a sturdy container, clearly mark the contents, and deliver to a hazardous waste collection program or contact a local service station or radiator repair shop to see if they will dispose of the waste for you.

If your vehicle is a newer model, the radiator will probably be made of aluminum and plastic (you may want to check with your dealer to be sure). Used antifreeze can then be disposed in one of two ways. The first way is the same as outlined above. The second way depends upon the type of sewer system you have. If your home is connected to a sewage treatment plant, then the used antifreeze may be dumped down the drain followed by a large amount of water. **CHECK WITH YOUR SEWAGE TREATMENT PLANT BEFORE DISPOSING IN THIS MANNER.** Not all sewage treatment plants are able to accommodate antifreeze. Only a small amount, 1-2 gallons should be handled this way. This method should not be used to dispose of large quantities of used antifreeze. Make sure that you thoroughly rinse the drain or toilet used so pets are not attracted to residual amounts of antifreeze.

It is not recommended to dump used antifreeze into a septic system. If you do not have a friend whose home is attached to a sewage treatment plant that will "lend" you a drain, try to dispose of the used antifreeze at a service station or radiator shop. Do not dispose of used antifreeze by: pouring it out in the backyard or at the curb; pouring it into a storm sewer, stream, lake, or river; putting it into your garbage for collection; taking it to the dump; or by mixing with used oil.



Antifreeze Safety Tips

- 1.) Prevent spills - use caution in adding or removing antifreeze from your car.
- 2.) Properly maintain the car's cooling system. Fix leaky radiators immediately and clean up all leaks with absorbent materials.
- 3.) Purchase only the amount of antifreeze needed for maintenance of the car. If you plan to store antifreeze, leave it in the original container (do not remove the label), make sure the lid is on securely, and place the container up and out of reach of children and pets.
- 4.) Properly dispose of all used antifreeze.